

WHAT WE CLAIM IS:

1. A parking assist apparatus comprising:

an initial traveling locus calculating means for calculating an initial traveling locus from an initial position of a vehicle to a target parking position in which the vehicle is desired to be parked;

a new traveling locus calculating means for calculating a new traveling locus from a present vehicle position to the target parking position when a deviation amount of the present vehicle position from a initial traveling locus is equal to or greater than a first predetermined value;

a parking assist means for performing a parking assist to guide the vehicle along the traveling locus generated by one of a calculation of the initial traveling locus calculating means and a calculation of the new traveling locus calculating means; and

an initial traveling locus deviation calculating means for calculating the deviation amount of the present vehicle position from the initial traveling locus generated by the calculation of the initial traveling locus calculating means; wherein the parking assist means stops performing the parking assist when the deviation amount calculated by the initial traveling locus deviation calculating means is equal to or greater than a second predetermined value which is greater than the first predetermined value.

2. A parking assist apparatus according to claim 1, wherein the new traveling locus calculating means stops calculating the new traveling locus to the target parking position when the deviation amount calculated by the initial

traveling locus deviation calculating means is equal to or greater than the second predetermined value.

3. A parking assist apparatus according to claim 2, wherein the initial traveling locus deviation calculating means calculates the deviation amount of the present vehicle position from a desired position of the vehicle on the initial traveling locus generated by the calculation of the initial traveling locus calculating means, which is obtained in case of the vehicle moving on the initial traveling locus with a distance corresponding to a traveling distance of the vehicle from the initial position to the present position.

4. A parking assist apparatus according to claim 3, further comprising an error informing means for informing a vehicle driver of a system error when the deviation amount calculated by the initial traveling locus deviation calculating means is equal to or greater than the second predetermined value.

5. A parking assist apparatus according to claim 1, wherein the first predetermined value is a minimum distance between the present vehicle position and the traveling locus.

6. A parking assist apparatus according to claim 1, wherein the second predetermined value is a minimum distance between the present vehicle position and the initial traveling locus.

7. A parking assist apparatus comprising:
an initial traveling locus calculating means for calculating an initial traveling locus from an initial position of a vehicle to a target parking position in which the vehicle is desired to be parked;
a new traveling locus calculating means for calculating a new traveling locus from a present vehicle position to the target parking position when a deviation

amount of the present vehicle position from a current traveling locus is equal to or greater than a first predetermined value;

a parking assist means for performing a parking assist to guide the vehicle along the traveling locus generated by a calculation of the initial traveling locus

calculating means or a calculation of the new traveling locus calculating means;

and

a number counting means for counting a number of the new traveling locus to be generated by the calculation of the new traveling locus calculating means after the initial traveling locus is generated by the calculation of the initial traveling locus calculating means; wherein the parking assist means stops performing the parking assist when the number of the new traveling locus to be generated, which is counted by the number counting means, is equal to or greater than a predetermined number.

8. A parking assist apparatus according to claim 7, further comprising an error informing means for informing a vehicle driver of a system error when the number counted by the number counting means is equal to or greater than the predetermined number.